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Business Monitor

A publication of the Government Statistical Service

Report on the Census of Production

Shipbuilding and marine engineering



Department of Industry
Business Statistics Office

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PA370

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Report on the Census of Production 1973

Shipbuilding and marine engineering

Presented by the Secretary of State for Industry
to Parliament in pursuance of the Statistics of Trade Act 1947
(10 & 11 Geo.6 Cha.39 sec 7)

Department of Industry
Business Statistics Office

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PA370 SHIPBUILDING AND MARINE ENGINEERING

The information in this report relates to establishments classified to the Shipbuilding and marine engineering industry, minimum list heading 370 in the Standard Industrial Classification (revised 1968). The activities of the industry include:-

Building or repairing ships (naval and merchant), boats, barges, lighters, etc. of all types and sizes, whether self-propelled or not; making oars, masts and spars, rigging and other tackle and ships' models, off-shore oil and gas drilling rigs (floating); manufacturing and repairing main and auxiliary steam (reciprocating and turbine) engines for ships and marine boilers. The manufacture or repair of internal combustion engines for ships and boats (including out-board motors) is included if carried out at marine engineering establishments. The manufacture of ships' capstans and winches is excluded.

In interpreting the data in the tables it is essential to bear in mind the notes and definitions which commence on page (iii).

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TABLE 1

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Output and costs, 1970, 1971, 1972 and 1973
All United Kingdom establishments classified to the industry (a)

	Unit	1970	1971	1972	1973
Enterprises (b)	Number	1,074	1,022	981	1,144
Establishments (b)	"	1,167	1,168	1,126	1,275
Value of vessels and floating equipment completed for sale (c)	"				345,458
Other sales of goods produced, work done and industrial services rendered (including marine engineering) (c)	"	561,152	650,223	714,190	406,038
Capital goods produced for establishments own use (c)	"				7,841
Non-industrial services rendered (d)	"				3,519
Goods merchanted or factored	"	11,863	14,683	15,199	11,076
Total sales and work done (d)	"	573,016	664,907	729,389	773,932
Increase during the year, goods on hand for sale (e)	"	469	-64	871	302
Increase during the year, work in progress	"				
Vessels and floating equipment of all tonnages (f)	"	41,951	32,988	51,803	86,434
Other work in progress including marine engineering	"	16,748	28,289	20,819	30,372
Gross output (d)	"	632,184	726,120	802,882	891,041
Purchases of materials for use in production, and packaging and fuel (c)	"	279,976	320,316	344,538	378,061
Purchases of goods for merchanding or factoring (c)	"				(g)
Increase during the year, stocks of materials, stores and fuel	"	3,246	-1,849	329	10,628
Cost of industrial services received (h)	"	37,542	40,106	48,734	60,619
Net output (j)	"	317,912	363,849	409,940	462,989
Total employment (k)	Thousands	182.7	177.3	179.9	181.6
Net output per head (j)	£	1,740	2,052	2,279	2,550
Payments for non-industrial services (l)					
Rents, hire of plant, machinery and vehicles	£'000				3,272
Commercial insurance premiums	"				8,146
Bank charges	"				404
Other non-industrial services	"				12,550
Licensing of motor vehicles (m)	"				132
Rates, excluding water rates (m)	"				5,925
Gross value added at factor cost	"				432,561
Gross value added at factor cost per head	£				2,382

- (a) For 1973, estimates for establishments not making satisfactory returns and for establishments employing less than 20 persons accounted for 17 per cent of the total figures in which they were incorporated: of this unsatisfactory returns accounted for 13 per cent.
- (b) Increase from 1972 to 1973 largely attributable to improved estimates of the number of establishments with less than 20 employees - see notes on page (iii).
- (c) Not recorded separately for 1970-1972.
- (d) The figures for 1970-1972 do not include revenue from rents for industrial buildings.
- (e) Excluding vessels and floating equipment of all types.
- (f) Including all types of merchant vessels, pleasure craft, war vessels, floating docks, pontoons, off-shore drilling rigs, etc.
- (g) Included in purchases of materials for use in production and packaging and fuel.
- (h) The figures for 1970-1972 exclude the amounts payable for repairs and maintenance.
- (j) The definition of net output used in previous census reports provided for the deduction of amounts payable to other organisations for transport of goods within the United Kingdom. The net output and net output per head figures on that basis were:-
- | Year | Net output
£'000 | Net output per head
£ |
|------|---------------------|--------------------------|
| 1970 | 314,565 | 1,722 |
| 1971 | 360,881 | 2,036 |
| 1972 | 406,387 | 2,259 |
- Additionally, the figures for 1970-1972 do not reflect revenue from rents or amounts payable for repairs and maintenance (see footnotes d and h).
- (k) Average number employed (full and part-time; see table 7) during the year (including working proprietors) by the establishment.
- (l) Not collected for 1970-1972 except for amounts payable to other organisations for transport of goods within the United Kingdom.
- (m) Not collected for 1970-1972.

TABLE 2

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Capital expenditure, 1970, 1971, 1972 and 1973
All United Kingdom establishments classified to the industry (a)(b)

	£'000			
	1970	1971	1972	1973
Land and buildings				
New building work	12,329	10,993	8,494	16,621
Land and existing buildings				
Acquisitions	678	560	1,141	991
Disposals	284	934	3,007	511
Vehicles				
Acquisitions				
Motor cars (c)	1,203	1,131	1,298	1,057
Other vehicles (c)				734
Disposals				
Motor cars (c)	449	418	440	371
Other vehicles (c)				41
Plant and machinery				
Acquisitions	15,722	16,934	16,651	23,351
Disposals	704	1,236	1,173	1,473
Total net capital expenditure (d)	28,495	27,030	22,964	40,358

- (a) Including estimates for establishments not making satisfactory returns and for establishments exempted by virtue of size.
- (b) Capital expenditure in respect of manufacturing establishments where production had not commenced before the end of the year, is included.
- (c) Not recorded separately for 1970-1972.
- (d) New building work plus acquisitions less disposals of land and existing buildings, vehicles and plant and machinery.

TABLE 3

Stocks and work in progress, 1970, 1971, 1972 and 1973
All United Kingdom establishments classified to the industry (a)

	£'000			
	1970	1971	1972	1973
	Increase			Value at end of year
Materials, stores and fuel	3,246	-1,849	329	10,628
Work in progress				
Vessels and floating equipment of all tonnages (b)	41,951	32,988	51,803	86,434
Other work in progress including marine engineering	16,748	28,289	20,819	30,372
Goods on hand for sale (c)	469	-64	871	302
Total	62,414	59,364	73,822	127,737

- (a) Including estimates for establishments not making satisfactory returns and for establishments exempted by virtue of size.
- (b) Including all types of merchant vessels, pleasure craft, war vessels, floating docks, pontoons, off-shore drilling rigs, etc.
- (c) Excluding vessels and floating equipment of all types.

TABLE 4

PA370 4

Analysis of establishments by size, 1973
All United Kingdom establishments classified to the industry (a)

Size group (b)	Establishments	Enterprises (c)	Employment			Wages and salaries (e)			
			Total (b)	Operatives	Others (d)	Operatives		Others (d)	
						Total	per head	Total	per head
Number	Number	Number	Number	Number	Number	£'000	£	£'000	£
1 - 10	728	710	3,602	12,951	2,893	22,986	1,775	5,775	1,996
11 - 19	178	176	2,616						
20 - 49	133	129	4,004						
50 - 99	91	86	6,524						
100 - 199	51	48	6,906	5,585	1,303	10,309	1,846	2,728	2,094
200 - 299	14	13	3,437	2,904	531	5,739	1,976	1,011	1,903
300 - 399	12	12	4,093	3,321	772	6,144	1,850	1,740	2,254
400 - 499	15	13	6,555	5,268	1,287	9,245	1,755	2,734	2,124
500 - 749	9	9	5,161	4,121	1,040	7,221	1,752	2,098	2,018
750 - 999	14	12	12,435	10,066	2,369	18,866	1,874	5,147	2,172
1,000 - 1,499	7	7	8,685	7,191	1,494	14,411	2,004	3,380	2,262
1,500 - 1,999	3	3	5,213	3,859	1,351	7,698	1,995	3,019	2,234
2,000 - 2,499	3	3	6,859	5,092	1,767	9,188	1,804	3,775	2,136
2,500 - 2,999	4	4	10,412	8,906	1,506	16,532	1,856	3,512	2,332
3,000 - 7,499	8	7	39,460	29,913	9,547	50,964	1,704	23,222	2,432
7,500 and over	5	4	55,611	42,297	13,314	71,821	1,698	30,692	2,305
Total	1,275	1,144	181,573	141,474	39,174	251,123	1,775	88,832	2,268

- (a) Including estimates for establishments not making satisfactory returns and for establishments exempted by virtue of size.
- (b) Average number employed (full and part-time; see table 7) during the year (including working proprietors) by the establishment.
- (c) Some enterprises control establishments in more than one size group: the sum of the figures for the size groups therefore exceeds the total for the industry.
- (d) Administrative, technical and clerical employees.

1275
1144
1144
2419

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Total sales and work done (f)	Gross output	Net output		Gross value added at factor cost		Net capital expenditure (g)	Total stocks and work in progress at end of year
		Total	per head	Total	per head		
£'000	£'000	£'000	£	£'000	£	£'000	£'000
77,180	80,653	40,226	2,402	(h)	(h)	2,065	18,862
33,490	34,795	19,096	2,765	55,102(h)	2,330(h)	1,758	8,142
15,333	16,094	9,365	2,725	8,737	2,542	416	4,115
18,172	20,428	12,018	2,936	11,238	2,746	489	7,663
32,995	35,911	18,293	2,791	17,061	2,603	312	16,230
21,922	23,094	13,359	2,588	12,704	2,462	333	9,859
57,652	70,432	39,653	3,189	36,913	2,969	3,207	36,122
35,379	44,147	20,205	2,326	18,574	2,139	958	31,468
26,843	27,737	13,508	2,591	11,629	2,231	2,554	7,131
39,300	42,552	20,152	2,938	18,483	2,695	1,062	22,397
44,665	66,458	30,158	2,896	28,418	2,729	2,156	48,083
164,003	183,477	103,171	2,615	97,855	2,480	9,203	153,101
206,996	245,265	123,786	2,226	115,847	2,083	15,845	239,485
773,932	891,041	462,989	2,550	432,561	2,382	40,358	602,657

- (e) Another important component of labour costs, employers' national insurance contributions, graduated pensions, contributions to other pensions and welfare schemes and the running costs of canteens, is estimated for the industry at £27,545 thousand.
- (f) Comprises sales of goods produced (including capital goods manufactured, buildings constructed by establishments for their own use), work done, industrial and non-industrial services rendered, goods merchanted or factored.
- (g) New building work plus acquisitions less disposals of land and existing buildings, vehicles and plant and machinery.
- (h) Gross value added data relates to establishments employing 1 - 199 persons.

TABLE 5

PA370 6

Regional distribution of employment, net capital expenditure and net output, 1973
All United Kingdom establishments classified to the industry (a)

Area	Employment (b)		Net capital expenditure (c)				Net output and employment in the region of establishments with more than 80 per cent of their employment in the region (e)			
	Thousands	per cent of United Kingdom	£'000	per cent of United Kingdom	£'000	Other (d)	Estimated net output	Average number employed as a percentage of total average number employed in the industry in the region	Net output as a percentage of total of the industry in the United Kingdom	
Standard regions of England										
North	36.2	19.9	3,938	9.8	132	3,806	83,095	84.0	17.9	
Yorkshire and Humberside	6.2	3.4	1,513	3.7	148	1,365	12,449	61.6	2.7	
East Midlands	*	*	*	*	*	*	*	*	*	
East Anglia	3.5	2.0	940	2.3	4	936	7,370	64.1	1.6	
South East	38.3	21.1	5,975	14.8	*	*	70,616	70.5	15.3	
South West	17.9	9.9	3,583	8.9	29	3,555	43,394	85.2	9.4	
West Midlands	*	*	*	*	*	*	*	*	*	
North West	24.6	13.5	6,474	16.0	64	6,411	55,627	92.8	12.0	
England	128.3	70.7	22,708	56.3	362	22,346	274,676	79.7	59.3	
Wales	*	*	*	*	*	*	*	*	*	
Scotland	41.5	22.9	7,775	19.3	125	7,650	89,443	85.1	19.3	
Great Britain	*	*	*	*	*	*	*	*	*	
Northern Ireland	*	*	*	*	*	*	*	*	*	
Unallocated (a) (f)	—	—	—	—	—	—	82,033	—	17.7	
United Kingdom	181.6	100.0	40,358	100.0	480	39,878	462,989	—	100.0	

(a) Including estimates for establishments not making satisfactory returns and for establishments exempted by virtue of size.

(b) Average number employed (full and part-time; see table 7) during the year (including working proprietors).

(c) New building work plus acquisitions less disposals of land and existing buildings, vehicles and plant and machinery.

(d) Acquisitions less disposals.

(e) Where a census return covered addresses in two or more regions an estimate was made of the net output attributable to the region only where more than 80 per cent of the establishment's employees were located in the region. The estimate was made by assuming that net output at each address covered by a return was proportionate to employment at the address. The establishment's residual net output was included in unallocated net output.

(f) Includes unallocated net output of establishments covering addresses in two or more regions.

TABLE 6

PA370 7

Percentage analysis of twelve-month periods covered by returns received from United Kingdom establishments employing 20 or more persons, 1973

Accounting year ended	Percentage of total returns received	Percentage of total number employed
	per cent	per cent
1973 April (a)	1.2	0.1
May	0.8	0.1
June	3.5	1.3
July	1.6	0.5
August	2.3	0.3
September	13.2	4.4
October	4.3	0.3
November	1.6	0.1
December	47.9	59.9
1974 January	1.9	0.3
February	1.9	0.3
March (b)	19.8	32.4
	100.0	100.0

(a) From 6th April.

(b) Including returns made for twelve-month period ended 1st to 5th April 1974.

TABLE 7

Percentage analysis of employees, by full and part-time employment and sex, 1973 (a)

Sex	Full-time	Part-time	All employees
	per cent	per cent	per cent
Male	93	1	94
Female	5	1	6
	98	2	100

Source: Department of Employment

(a) The percentages relate to the numbers employed (excluding working proprietors) in the United Kingdom at mid-June, 1973.

TABLE 8

PA370 8

Sales of principal products of the industry by establishments employing 25 or more persons, including sales by establishments classified to other industries, 1973 (a)

	Quantity		Value
	Number	Thous Displacement Tons	£'000
Ships and boats:			
Completion:			
War vessels	12	18	72,861
		Thous Gross Tons	
Floating structures (including floating docks and cranes, coffer dams, caissons, landing stages, pontoons, buoys, beacons, platform drilling rigs, etc.)	4	8	2,944
Commercial type vessels (complete vessels and hulls) of 100 gross tons and over (including merchant registered royal fleet auxiliary vessels):			
Self-propelled:			
Cargo vessels of 300 gross tons and over:			
Bulk carriers	14	439	54,493
Container ships (b)	3	50	(b)
Other dry-cargo ships (including cargo, passenger-cargo liners and vehicle transporters) (b)	35	322	111,426(b)
Tankers of 300 gross tons and over (e.g. oil, gas, chemical, molasses and products tankers)	9	221	27,927
Ferries (passenger and passenger-vehicle)	5	3	2,299
Tugs (including tug/supply vessels)	13	8	9,209
Trawlers	31	14	3,810
Dredgers	6	11	5,157
Other (including tanker type and cargo vessels of 100 but less than 300 gross tons, passenger and cruise liners, drilling ships, supply vessels, hopper and coastal barges)	14	6	5,265
Not self-propelled - lighters, barges, etc.	17	5	1,021
Total value of completions	..	..	296,412
Deliveries:			
Commercial type vessels (complete vessels and hulls) of less than 100 gross tons:			
Self-propelled:			
Lifeboats	403	..	1,715
Fishing vessels	27	1	1,435
Tugs	13	1	1,070
Other	149	3	2,278
	Number		
Not self-propelled:			
Lifeboats	132		159
Other	41		3

TABLE 8 (continued)

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	Quantity		Value
	Number	Thous Gross Tons	£'000
Ships and boats: (continued)			
Pleasure type craft:			
Hulls sold as such and prefabricated structural sections	..	..	2,426
Complete vessels:			
100 gross tons and over	1	..	180
Under 100 gross tons (including assembly kits):			
In board powered including inboard auxiliary sailing yachts:			
Mainly of glass reinforced or other plastics:			
Over 26 feet in length	2,203		15,331
Not over 26 feet in length	1,485		3,820
Mainly of wood	175		822
Other (including concrete and metal)	48		481
Craft purpose-built to require an outboard engine (including the value of engine when sold with boat):			
Mainly of glass reinforced or other plastics	5,179		2,884
Other (including wood, metal, concrete, etc.)	18		235
Other (including sailing and rowing types, canoes and house-boats):			
15 feet or more in length:			
Mainly of glass reinforced or other plastics	2,261		2,300
Other (including wood, metal, concrete, etc.)	993		114
Other (including sailing and rowing types, canoes and house-boats):			
Less than 15 feet in length:			
Mainly of glass reinforced or other plastics	4,525		429
Other (including wood, metal, concrete, etc.)	6,590		488
	Number	Thous Shaft h.p.	£'000
Marine engines and machinery:			
Completions:			
Propelling machinery (main and auxiliary engines and turbines):			
Steam turbines:			
Complete	..	..	(c)
Parts	..	..	(c)
Gas turbines:			
Complete	..	..	(c)
Parts	..	..	(c)

TABLE 8 (continued)

PA370 10

	Quantity		Value
	Number		£'000
Marine engines and machinery: (continued)			
Deliveries:			
Internal combustion reciprocating engines (including outboard types):			
Complete:			
Diesel (compression ignition):			
Not over 30 bhp	2,578		1,270
Over 30 bhp not over 50 bhp	2,924		1,303
Over 50 bhp not over 100 bhp	5,464		2,843
Over 100 bhp not over 200 bhp	2,884		3,424
Over 200 bhp not over 300 bhp	444		1,343
Over 300 bhp not over 500 bhp	154		1,128
Over 500 bhp not over 1,000 bhp	102		1,644
Over 1,000 bhp not over 1,500 bhp	74		2,068
	Number	Thous B.h.p.	
Completions:			
Over 1,500 bhp not over 2,500 bhp	60	126	2,822
Over 2,500 bhp not over 4,000 bhp	25	79	1,331
Over 4,000 bhp not over 10,000 bhp	27	197	5,878
Over 10,000 bhp not over 15,000 bhp	18	230	6,351
Over 15,000 bhp not over 30,000 bhp	7	137	3,468
Over 30,000 bhp	—	—	—
Deliveries:			
Petrol and other spark ignition:			
Not over 10 bhp	..	..	(c)
Over 10 bhp	..	..	(c)
	Number		
Parts (including incomplete engines sold in kd condition)	..		17,371
Auxiliary machinery (other than propelling engines and turbines):			
	Number	Thous Shaft h.p.	
Steam turbines:			
Complete	..	..	(c)
Parts	..	..	(c)

TABLE 8 (continued)

PA370 11

	Quantity		Value
	Number		£'000
Marine engines and machinery: (continued)			
Auxiliary machinery (other than propelling engines and turbines): (continued)			
Internal combustion reciprocating engines (diesel (compression ignition) petrol and other spark ignition):			
Complete:			
Not over 50 bhp	687		200
Over 50 bhp not over 100 bhp	315		283
Over 100 bhp not over 300 bhp	62		325
Over 300 bhp not over 500 bhp	94		937
Over 500 bhp not over 1,000 bhp	150		2,541
	Number	Thous B.h.p.	
Over 1,000 bhp	48	63	1,916
Parts	..	..	8,501
Boilers, complete	..	..	(c)
	No. of sets		
Steering gear and/or stern gear, complete	1,295		3,075
Reduction gear, complete	267		7,561
Other auxiliary marine machinery, complete not specified above (including auxiliary gas turbines, bow thrusters, mechanically operated hatch covers, propellers, stabilizers, trawl doors, etc., but excluding compressors and pumps)	..		19,027
Parts of boilers, steering/stern gear, reduction gear, auxiliary gas turbines, bow thrusters, propellers, stabilizers, etc., and marine machinery not elsewhere specified.	..		11,539
Other principal products of m.l.h. 370			
Deliveries:			
Ships and boats fittings (e.g. Life-boat gear, blocks, masts, spars, oars, decking, rigging, tackles, ships steering wheels, etc.) sold separately and ships models:			
For pleasure boats and yachts	..		10,250
For all other ships and vessels	..		..
Products not specified above (c)	..		52,668
	Thous. Tons		
Waste products (e.g. scrap metal)	125		1,450
	Quantity	Value	
			£'000
Work done			
Ships, floating structures and boats (excluding work on marine machinery):			
New building sub-contract work done for others (e.g. insulation and similar work, painting, heating and ventilating etc., electrical and like work, deck and flooring work, etc.)			
	..		6,543

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TABLE 8 (continued)

PA370_12

	Quantity	Value
		£'000
Work done: (continued)		
Ships, floating structures and boats (excluding work on marine machinery): (continued)		
Repair, maintenance, conversion and refit:		
Sub-contract work done for others	..	8,948
Other (i.e. main contract) work:		
War vessels (excludes merchant registered royal fleet auxiliary vessels)	..	102,015
Tankers	..	17,390
Other vessels (including floating structures, commercial and pleasure type craft):		
100 gross tons or more	..	72,688
Less than 100 gross tons:		
Pleasure type craft	..	2,718
Other (including commercial craft, buoys, etc.)	..	3,068
Marine machinery:		
Installation (excluding that performed by ship builders in vessels of their own construction)	..	10,560
Repair, maintenance, jobbing work etc.	..	12,734
Other work done (excluding general engineering repair and jobbing, building and civil engineering, erection of constructional steelwork, and erection and installation of air-conditioning, heating and ventilating plant)	..	8,149
Total sales of principal products of the Ship-building and marine engineering industry (MLH 370) and work done		749,912

Source: Business Monitor (PQ 370). Quarterly Statistics

- (a) Sales are deliveries on sale for home or abroad; forward sales are excluded. Values are net selling values, value added tax (or purchase tax where previously applicable) trade discounts and commissions are excluded.
- (b) Values of "containers ships" are included in "other dry cargo ships" where indicated.
- (c) Included in "products not specified above".

Notes

These notes give the main information needed for interpreting the figures in the industry Business Monitors: more detailed information about the census is given in a separate Business Monitor — PA1001 (Introductory Notes) of the Report on the Census of Production, 1973.

GENERAL INFORMATION

Changes made for 1973

The Census for 1973 was the first to be modified to bring it into line with similar inquiries being conducted in other member countries of the European Economic Communities. One modification has made possible the publication for the first time in the Annual Censuses of data on a number of additional items. These include:

- Capital goods purchased for establishments' own use (previously included with sales of goods produced etc.)
- Purchases of goods for merchandising or factoring (previously included with purchases of materials etc.)
- Payments for non-industrial services
- Licensing of motor vehicles
- Rates, excluding water rates
- Gross value added
- Amounts paid to outworkers (where applicable)
- Employers' national insurance contributions etc.

Suppression of information relating to individual undertakings.

The Statistics of Trade Act 1947 provides that — "No individual estimates or returns, and no information relating to an individual undertaking obtained under the foregoing provisions of this Act, shall, without the previous consent in writing of the person carrying on the undertaking which is the subject of the estimates, returns or information, be disclosed except—

- (a) in accordance with directions given by the Minister in charge of the government department in possession of the estimates, returns or information to a government department or to the Import Duties Advisory Committee for the purposes of the exercise by that department or committee of any of their functions; or
- (b) for the purposes of any proceedings for an offence under this Act or any report of these proceedings."

If a figure involved disclosure the contributor concerned was sometimes asked to give permission for its publication. In the majority of cases this permission was given but when it was refused and in cases where the contributors were not approached the figure has been suppressed, sometimes by combining it in some way with other figures, but sometimes — as in the regional tables by omitting the figure altogether.

Symbols used

The following symbols are used throughout the P A series of Business Monitors:

- .. not available
- nil or less than half the final digit shown
- * figures cannot be shown owing to the risk of disclosing information about individual enterprises
- R revised

Rounding of figures

Figures in the tables have, where necessary, been rounded to the nearest final digit. There may, therefore, be an apparent slight discrepancy between a sum of constituent items and a total shown.

Industrial classification

The United Kingdom Standard Industrial Classification (SIC) was first issued in 1948 and was subsequently revised in 1958 and 1968. It exists to promote uniformity and comparability in the official statistics of the United Kingdom. The general principles followed are those of the International Standard Industrial Classification of all Economic Activities of the United Nations Statistical Office but the United Kingdom SIC reflects the organisation and structure of industry and trade as it exists in the United Kingdom. The SIC is a classification by activity and is not a commodity classification. However, an index of all commodity headings for which sales data are provided in the Quarterly Business Monitors is published as PQ1000 in the Business Monitor Series.

The SIC is revised every 10 years or so and is to be revised to bring it more closely into line with the General Industrial Classification of Economic Activities within the European Communities (NACE).

Statistical units

The statistical unit for the purpose of the Census is the establishment which is defined in the SIC as the smallest unit which can provide the information normally required for an economic census, for example, employment, expenses, turnover, capital formation. Usually the principal activities carried on in an establishment fall within a single heading of the classification (e.g. steel making or sugar refining). Typically the establishment embraces all the activities carried on at a single address e.g. a farm, a mine, or a factory, including those which are ancillary to the principal activities. Frequently distinct activities characteristic of different industries are carried on at one address, but normally these are not classified separately and the whole establishment is classified according to the main activity. If, however, the required range of data can be provided for each activity, each is taken to constitute a separate establishment. Sometimes activities which are conducted as a single business are carried on at a number of addresses. Where this is so, businesses are asked to provide the full range of separate information in respect of each address, whether or not the activities are different. Their activities may, however, be integrated to such an extent that they constitute a single establishment. In that case the establishment is defined to cover the combined activities at these addresses (termed local units). Separate figures are obtained, however, of employment and net capital expenditure at each unit.

Efforts are made by the Business Statistics Office to ensure, by negotiating with respondents, that the return from an establishment does not cover local units on addresses in more than one of the countries of the United Kingdom.

Further information about the statistical unit appeared in an article "The statistical unit in business inquiries" in Statistical News No. 13 May 1971.

Establishments are asked to exclude from their returns particulars relating to any department not engaged in production e.g. merchandising, transport, warehousing, for which they keep a separate set of accounts. Transfers of goods produced to such departments are treated as sales and respondents are asked to value them as far as possible as if sold to an independent purchaser. Where separate accounts are not kept they are asked to include details of all these activities in their return.

Particulars relating to head offices, which were mainly engaged in the administration of the production units within the scope of the census were included. Where more than one return was made the information in respect of the head office was apportioned among them.

For certain purposes in the annual censuses of production (especially the enterprise analyses of Business Monitor PA 1002) related establishments are combined. For these purposes an enterprise group is defined as a business consisting of either a single establishment, or of two or more establishments under common ownership or control. The bringing together of establishments into enterprise groups is also necessary for the purpose of ensuring that there will be no disclosure of the activities of any one enterprise group. Information about the relationship of establishments, the changing structure of groups of companies and about common ownership links is obtained from many sources, including the Stock Exchange Year Book, company reports, press reports and information supplied by individual establishments.

THE REGISTER

The register permits a questionnaire to be sent direct to the reporting establishment on which the latter can include information relating to all the manufacturing (or local) units which it comprises.

The inquiries provide a major source of information for keeping the register continuously up-to-date and act as a check on its detail and structure. For the establishments on the register which make returns to the quarterly inquiries, the industrial classification is derived from an analysis of their sales of commodities and is reviewed annually. Employment data is entered on the register from returns to the annual census of production. In cases where an establishment does not make a return to these inquiries the employment data is based on information provided by the Department of Employment from the annual censuses of employment.

Establishments with 20 or more employees are included in the censuses each year and the information they supply to the

(iii)

census is supplemented by the returns that those of them with 25 or more employees provide to the quarterly inquiries. Information about establishments with less than 20 employees in most industries is less securely based, but increasing use has been made of data on these small establishments supplied by the Department of Employment. One benefit of using this information is an improvement in the estimates of the number of smaller establishments and enterprises, but there is little effect on other aggregates (e.g. employment, output, net capital expenditure).

Coverage

A return was required in the 1973 Census from each establishment with 20 or more employees. Each establishment is classified to an industry, as defined in the SIC, whose principal products form the major part of the establishment's sales.

Regions

The regions defined in Table 5 do not take account of the boundary changes arising out of the Local Government Act 1972 and the Local Government Act (Scotland) 1973. As these boundary changes did not come into effect until April 1974 in England and Wales and in May 1975 in Scotland, the regions defined for these analyses are consistent with boundaries which existed in 1973.

TERMS USED IN THE CENSUS REPORT

Average number employed

Establishments were required to state the number of persons on the payroll (i.e. whose national insurance cards were held by them) on the average during the year of return, whether full-time or part-time employees. Separate figures were required for:

- (a) administrative, technical and clerical employees
- (b) all other employees (operatives)

Averages could be calculated from the figures relating to the last week of each calendar month. Establishments were also required to state the number of working proprietors where appropriate and these are included in total employment figures. Outworkers (i.e. persons employed by establishments who worked in their own homes etc. on materials supplied by the establishment) are excluded. The figures include persons engaged on merchanting or factoring and canteen workers where particulars in respect of these activities could not be excluded from the return.

Working proprietors

These include all persons regarded as "self-employed" for national insurance purposes and members of their families who worked in the business without receiving a wage or salary; but such persons who worked less than half the normal number of working hours are excluded. Directors working in the business but not in receipt of a definite wage, salary or commission are included under this heading; directors paid by fee only are not included.

Employees

Administrative, technical and clerical employees include directors in receipt of a definite wage, salary or commission, managers, superintendents and works foremen; research, design employees (other than operatives); draughtsmen, editorial staff, advertising staff, travellers and all office employees.

Operatives include all other classes of employees, that is, broadly speaking, all manual wage earners. They include operatives employed in power stations, transport (including roundsmen), warehouses, stores, shops and canteens, inspectors, maintenance workers and cleaners. Operatives engaged in outside work of erecting, fitting etc. are also included, but outworkers are excluded.

Capital expenditure

Capital expenditure during the year in respect of manufacturing units where production had not started before the end of the year is included in the figures for 1970 to 1973. Establishments were asked not to deduct from the value of capital expenditure amounts received or expected to be received in grants or allowances from the Government or any statutory body or local authority. Establishments with 100 or more employees were also asked to include a total net capital expenditure figure for the calendar year 1973.

(a) New building work

This represents the cost incurred during the year of new building and other constructional work to be used in connection with the business covered by the return. The value is that charged to capital account during the year of return; it includes expenditure on new buildings or on the extension or reconstruction of old buildings, the value of works of a capital nature carried out by the establishment's own staff and the cost of any newly constructed buildings purchased. Figures shown include any legal charges, stamp duties, agents' commissions, etc.

(b) Land and existing buildings

The items shown are the capital cost of freeholds purchased and the capital cost of premium payable for leaseholds acquired (excluding the value of any assets acquired in taking over an existing business), and the amounts receivable for any freeholds or leaseholds disposed of. The value is that charged to capital account during the year of return.

(c) Plant, machinery and vehicles

The items shown are the value of plant and machinery and of vehicles acquired, both new and second-hand, and the amount received for items disposed of during the year. The value of plant and machinery acquired includes plant, etc., which firms produced for their own use in connection with the business covered by the return. The value of plant etc., acquired is the expenditure charged to capital account during the year of return less any discounts received, but including the cost of transport and installation. Deductible value added tax is excluded but non-deductible value added tax on motor cars acquired is included. No deduction is made for depreciation, amortization or obsolescence. The proceeds of items disposed of during the year exclude amounts written-off for items scrapped.

Gross output

In the calculation of gross output the value of total sales and work done is increased by the rise (or reduced by the fall) during the year in the value of work in progress and goods on hand for sale.

Net output

Net output, a customary census measure, is calculated by deducting from gross output the cost of purchases (reduced by the rise, or increased by the fall, during the year of stocks of materials etc.) and the cost of industrial services received, and — where applicable — duties etc.

Net output per head

The figures of net output per head are derived by dividing the net output by the average number of persons employed (full and part-time) on all activities covered by the returns, including operatives, administrative, technical and clerical workers and working proprietors, but excluding outworkers.

Gross value added at factor cost

Gross value added at factor cost is calculated by deducting from net output the cost of non-industrial services (rent of buildings and capital equipment, commercial insurance premiums, bank charges and amounts paid for professional services, postal etc. services, transport, advertising etc.). This estimate of gross value added approaches more closely than census net output to the definition of net output or value added in national accounts statistics.

Gross value added at factor cost per head

The figures of gross value added at factor cost per head are derived by dividing the gross value added by the average number of persons employed (full and part-time) on all activities covered by the returns, including operatives, administrative, technical and clerical employees and working proprietors, but excluding outworkers.

Purchases

Purchases include the cost of materials and components bought for use in production; of fuel and electricity for all purposes; of packaging materials including the cost of returnable cases and containers when first purchased; of workshop materials; office materials and materials for repairs to establishment's own buildings, plant and vehicles when carried out by their own work people included in the returns; of consumable tools; and of parts for machinery purchased during the year as replacements. Water charges are also

included. Purchases of goods for merchanting or factoring were collected separately for 1973. Materials supplied by customers for processing are excluded, as are all purchases charged to capital account. The values shown exclude value added tax but include any duty paid (less rebate etc.), values exclude trade discounts allowed. The cost of transport is included only if included in the cost of materials as invoiced; amounts paid to transport organisations, including an establishment's own separate transport organisations for delivery of materials and fuel are, therefore, excluded. Materials purchased overseas are included at the c.i.f. cost plus any duty payable if the cost of transport from the docks are not included in the invoiced price, but at their full delivery cost if invoiced "carriage paid home". Materials and fuel transferred from another department of the establishment not covered by the same return are included at the estimated selling value recorded by the other department.

Sales of goods produced, work done and industrial services rendered

Sales for the purposes of the annual censuses means deliveries on sale of goods made by establishments in the United Kingdom covered by the inquiry. Sales of goods made for these establishments by outworkers or by establishments from materials given out to them are included; as also are sales of waste products. Any new building work and machinery or other capital items produced by establishments for hiring out or leasing are regarded as sales, the value included in the return being that adopted in the establishments' capital asset accounts. Forward sales and canteen takings are excluded. All sales in the period of the inquiry are included irrespective of when the goods were manufactured. Goods produced in one establishment and transferred either to ancillary departments not engaged in production and for which there are separate accounts, or to another establishment of the same firm not covered by the return, are treated as sales by the producing establishment and valued as far as possible as if they had been sold to an independent purchaser. Goods transferred to wholesale or retail selling organisations, for which separate accounts are kept are valued on the same basis.

The value shown for sales is the "net selling value" defined as the amount (excluding value added tax) charged to customers whether on an ex-works or delivered basis, after any trade discounts and agents' commissions have been deducted. The cost of packing materials less allowance for returnable cases is included. In industries where products attract Excise Duty the value stated is usually inclusive of duty if sold duty-paid and exclusive of duty if sold in bond or exported.

Figures for work done represent the amount charged for work carried out on materials supplied by a customer and include repair work. Within certain industries this heading covers a wide variety of activities. For example, within the food sector — butter packed on commission; within the textile industries — making up of garments, fur dressing and textile finishing; within printing and publishing — preparatory work on type-setting, block making and binding. Work done is also significant in the electrical machinery and heavy engineering industries, covering erection, installation and repair and jobbing work. Other activities within this heading include exploration work, research and development, glass cutting and dressing and planing of timber. Industrial services rendered includes repairs and maintenance, installation work, and technical research and studies rendered to other organisations.

Capital goods produced for establishments' own use

This includes all work carried out during the year by the establishments' own staff for their own use, which was of a capital nature.

Non-industrial services rendered

Includes rents received for commercial and industrial buildings, amounts charged for hiring out plant, machinery and other goods and amounts charged to other organisations for the provision of transport. Also includes amounts received for the right to use patents, trademarks, copyrights etc., manufacturing and quarrying rights and technical "know-how"; revenue from such staff facilities as canteens are also included.

Goods merchanted or factored

Merchant goods are those (excluding canteen sales) sold without having been subjected to any manufacturing process by the seller.

Stocks and work in progress

Values are given of stocks of goods on hand for sale and of materials, stores and fuel, at the end of the year of return and of the change during the year, including any stocks of goods held for merchanting or factoring. Work in progress is defined as materials which have been partially processed by the establishment but which are not usually sold or transferred to another establishment without further processing. The values include the cost of materials consumed and labour used, together with a margin of overhead costs, and profits. Progress payments made to sub-contractors are excluded and progress payments received from other organisations are not deducted.

Wages and salaries

These are amounts paid during the year to operatives and to administrative, technical and clerical employees. Payments to working proprietors, whether called salaries or not, are excluded. The values shown include all overtime payments, bonuses and commissions, whether paid regularly or not, and no deduction is made for income tax, insurances, contributory pensions, etc. The value of any payments in kind, travelling expenses, lodging allowances, etc. and employers' contributions to national insurances and pension schemes are excluded.

Remuneration paid to outworkers

The remuneration paid to outworkers (i.e. persons employed by the establishment who do their work in their own homes) is generally on a piece-work basis. Only amounts paid to outworkers whose names appear on the establishment's payroll are included. Amounts paid to outworkers by sub-contractors are excluded.

Employers' insurance and welfare contributions

This item includes employers' contributions to national insurance and graduated pensions as well as commercial insurance premiums to provide pensions, superannuation or other retirement benefits, sickness benefits, personal accident benefits, disability or death benefits for employees or former employees or their dependants. Contributions to the running costs of canteens, social centres, children's holiday homes, etc. for employees, former employees, and their dependants are also included.

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